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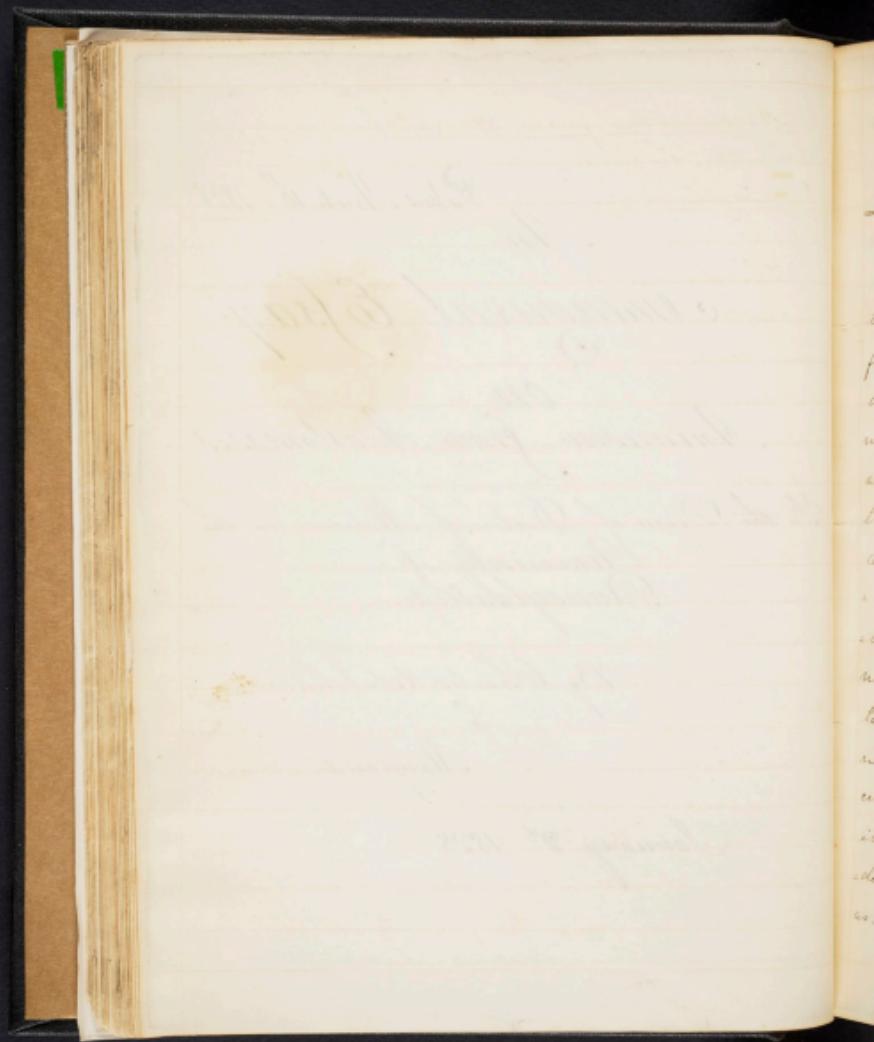
Inaugural Essay

On
Anæmia from Anastomosis.

In the Degree of Doctor of Medicine in the
University of
Pennsylvania.

By Charles W. Johnson
of Maryland.

January 2^d 1828

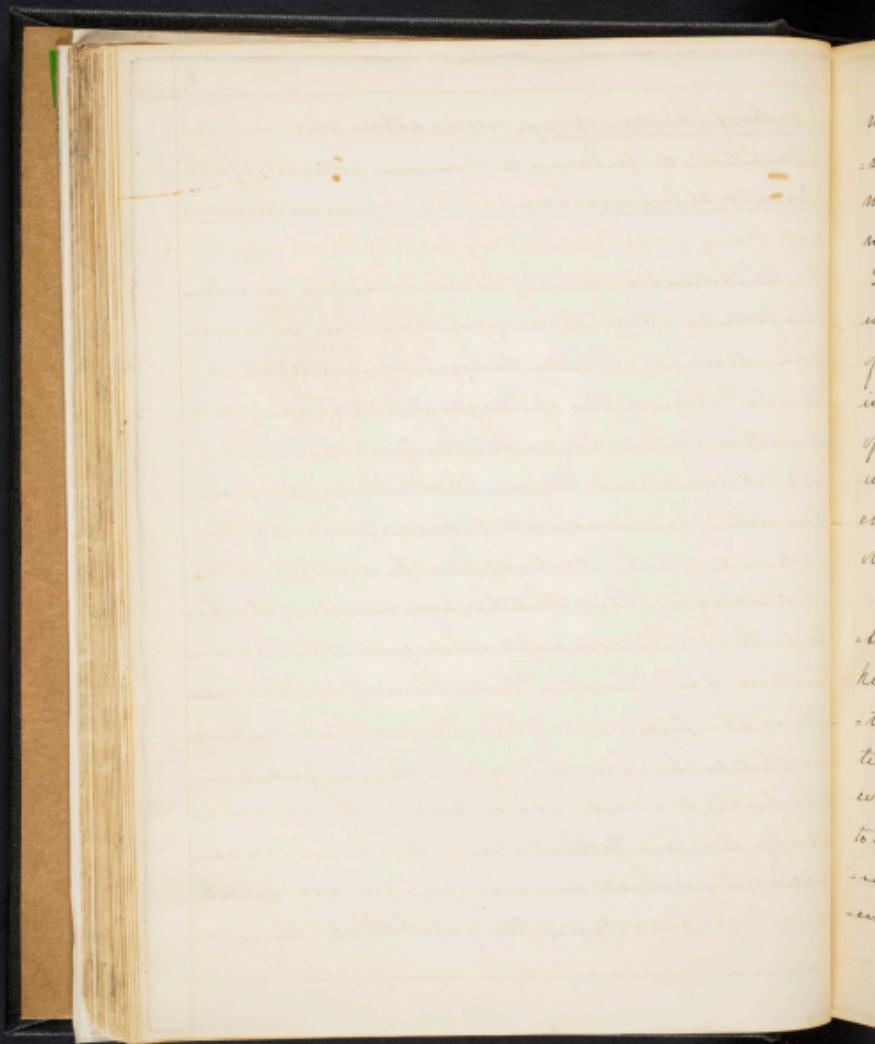


Aneurism from Anastomosis.

Confiteor; si quid prodest delicta patet.

I grant the charge; forgive the fault: confited.

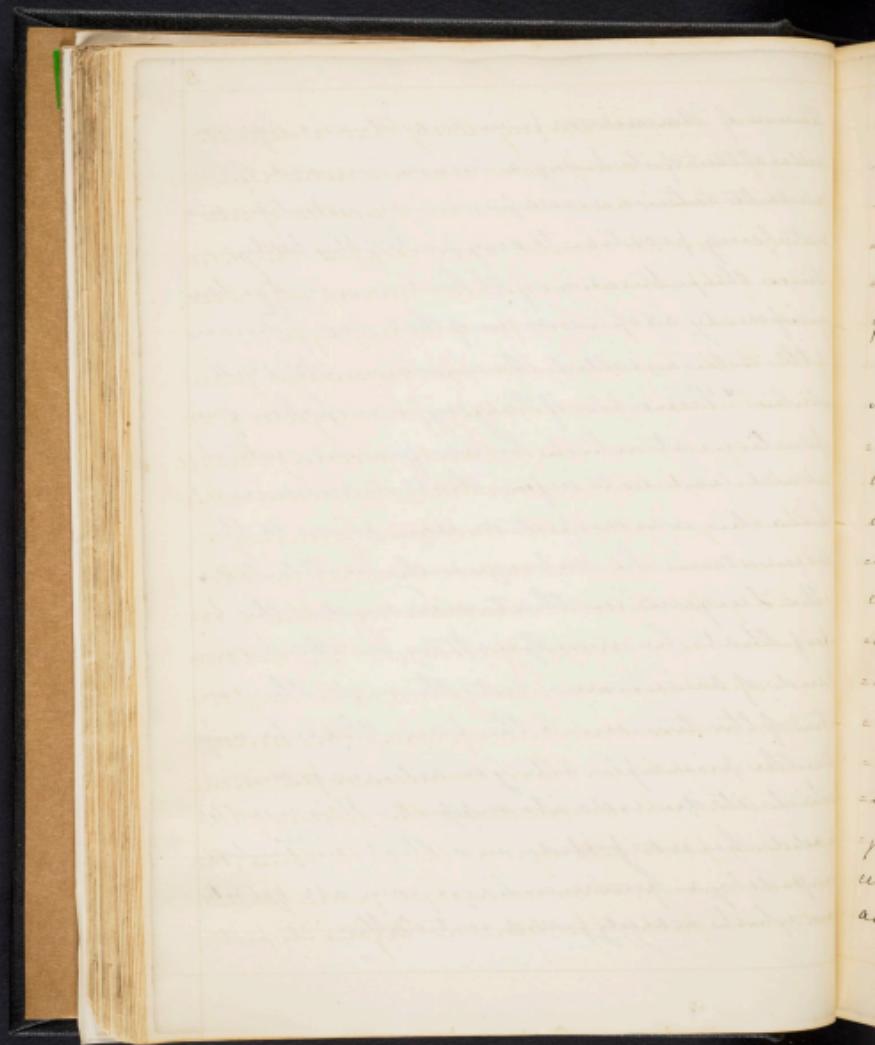
The disease which is now recognised under the title of Aneurism from Anastomosis, appears from Medical history, to have been observed by the Surgeons of the earliest times. There are many cases on record, under the head of "Bloody and Anomalous tumours"; which as they prove that the disease was not more rare among the ancients than it is at the present day, like a mirror where their entire ignorance of its structure, true nature, and consequently the proper method of treatment. This obscurity continued to be enlightened for many ages, and it was not until the time of Mr. John Bell that any certain and lucid account of this disease made its appearance. To his labours, the science is indebted for a correct demonstration of its character, as also the means of cure. He gave to it the



name of "Aneurism from anastomosis," in consideration of its being a tumour formed of the minute arteries, accompanied by pulsation and not being peculiar to any part of the body.

Since the publication of ~~of~~ his views, it has been uniformly adopted as one of that class of ^{this} disease of the arteries, called Aneurisms.—Mr. Bell in his "Principles of Surgery," has spoken of an operation, at which he was present, which would lead us to infer, that its aneurismatic character was suspected, even prior to the observations, he subsequently instituted.

The Surgeon in that case under the belief that he was operating on the known kind of aneurisms, cut through the centre of the tumour to the bone, that he might tie the principle artery or arteries, from which it derived its support. It is needless to add, he was foiled, and that he ^{was} impeded by a hemorrhage from all quarters, which scarcely proved controllable.



This case demonstrates very clearly that a definite idea of its true complexion, was not entertained at that time. And it is now a matter of surprise, how it should have escaped the detections of the many accurate observers, who have graced our Profession for so many ages.

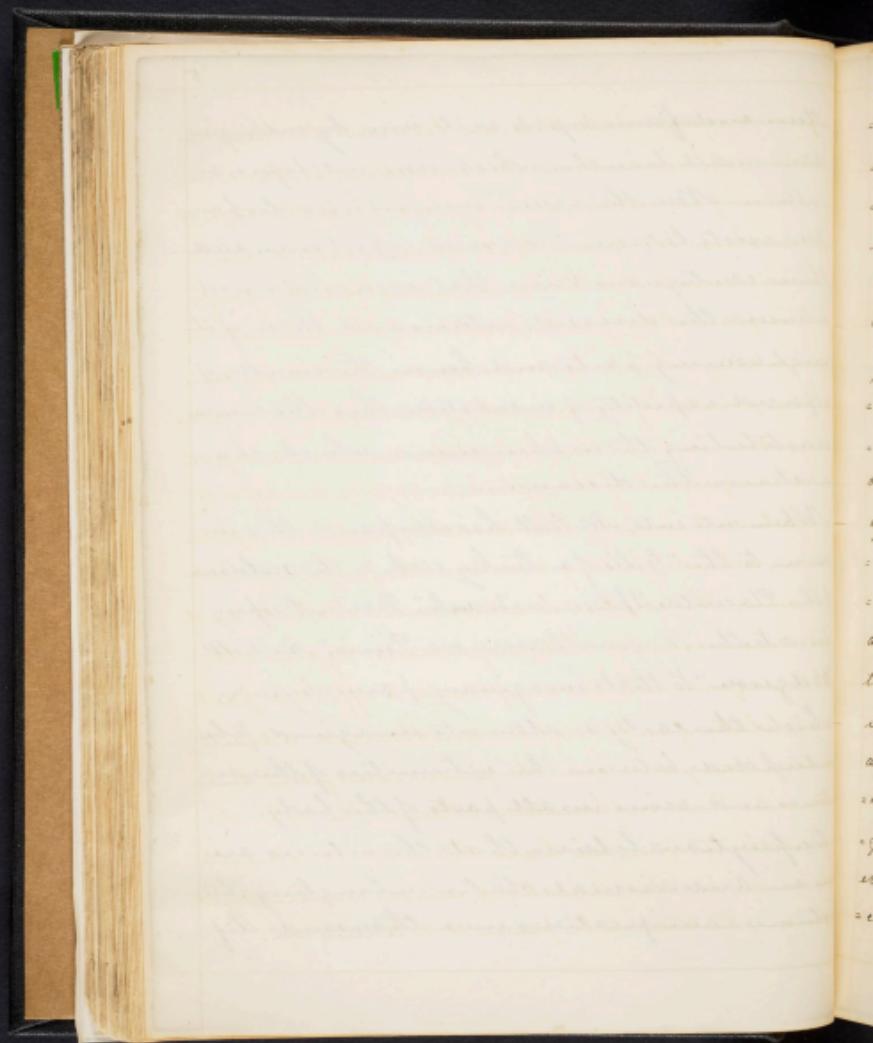
Mr. Bill has described the tumours from Anastomosis, as consisting of a congeries of active vesicles, sometimes barely piercing through cellular substance, sometimes communicating with larger cells, and sometimes forming around remarkable sacs or cavities in the centre of the tumour containing either a coagulum or a serous effusion. — The cutaneous capillaries are first found to be implicated, when the skin assumes this unnatural condition. These commence an increased action, which soon draws the arteries of adjoining parts into sympathy with them; the central group, thus nourished from behind, act powerfully; the tumour begins its pulsation,



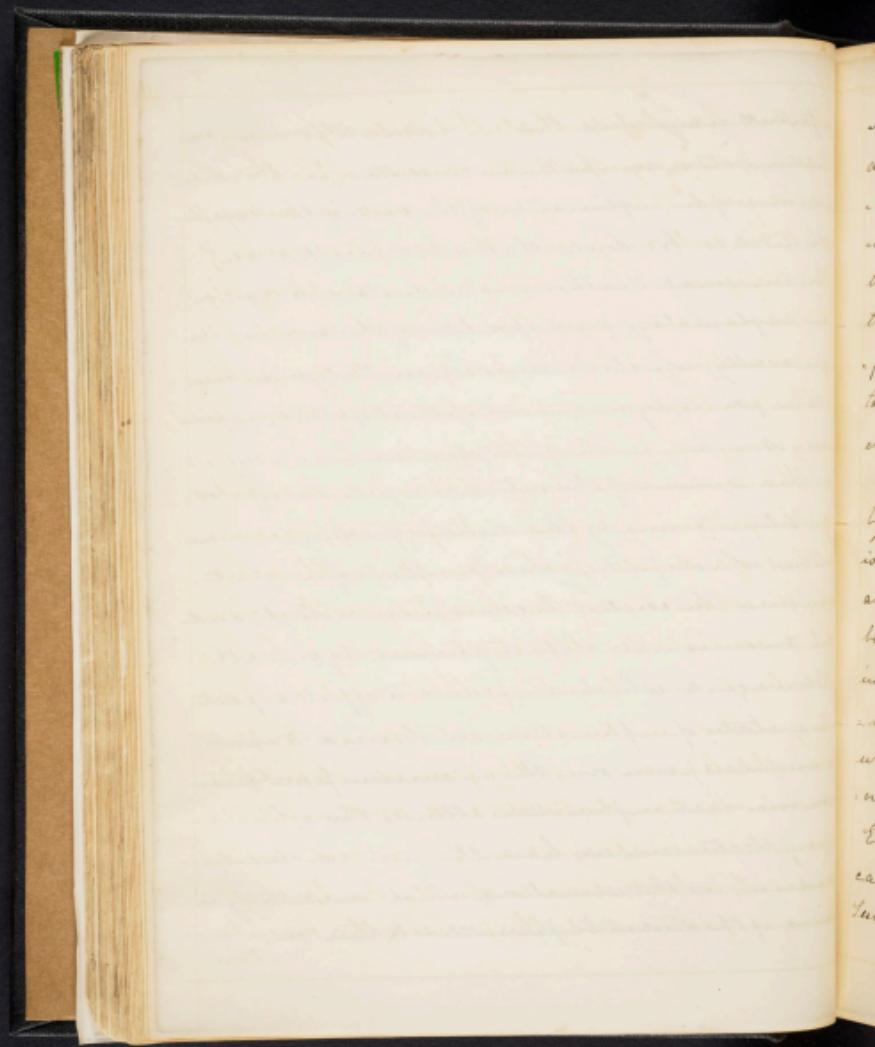
tions, and forms vessels as its own, by enlarging their small branches, which were not before visible.— Now the same sympathetic dispersion exists between the venous capillaries, and their contiguous veins, that is maintained between the diseased arteries and those of the neighbouring parts, and hence, the result, of a forced rapidity of circulation thro' the tumor constituting those phenomena which characterise the disease.—

When cut into, Mr. Bell has compared this tumor to the "Gills of a turkey cock, or the substance of the Placenta, Spleen, or Womb". Baron Dupuytren to the "Corpora Cavernosa Penis". And Mr. Hodgeson "to that imaginary paucityma, which the early anatomists imagined to be interposed between the extremities of the arteries and veins in all parts of the body".

Dupuytren believes that the arteries are in an anomalous state, entangling their extreme ramifications in a thousand dif-



uent ways. And this we believe to be their condition; moreover that this condition, is the consequence of an inflammation of the coats of the vessels themselves. We know that what is called an anæmicical diathesis, is understood to signify an inflammatory predisposition of the arterial tunica generally, which becomes concentrated in certain points, by means not yet satisfactorily explained. Now here in the first place we have a defect or disarrangement of the extreme vessels, an effort of nature to remedy this disorder, produces inflation, which failing to restore the proper equilibrium, the contest becomes more violent, and an anæmicical state supervenes. Again all those agents which are found to affect a part in a state of inflammation, are observed to exert a similar power over the anæmias from atherosclerosis. That inflammation attends the after stages of the tumour, we have the most conclusive evidence, in the ulceration which invariably occurs, if the disease be permitted to run on.



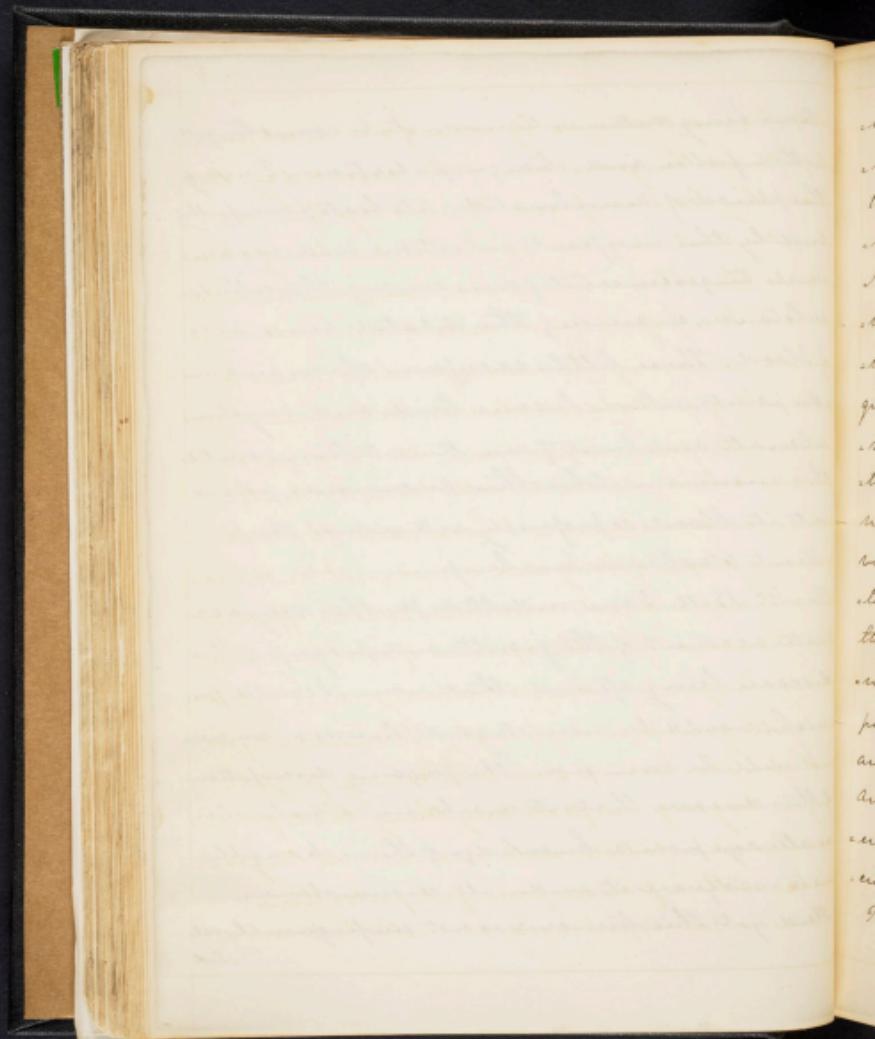
Mr Bell has stated that the parts adjoining are drawn into a sympathetic consent with the diseased group of primary vessels and in submissi-
on to his authority, and the accepted view of
the Professor. There sometimes employed
the same language, tho' I should much pre-
fer ascertaining what he has given to sympathy
to the continuous inflammation, as a cause in
every way adequate to the effect.

The Aneurism being established, is marked
by the following signs.— Its first appearance,
is that of a small speck or pimple, with scarce
any discolouration of the skin; Its growth is slow,
but uncontrollable; at first it has only a kind of
indistinct, and tumbling thro', such as is dis-
tinguished in Aneurismal Varix. But—
when the tumour is fully formed, its pulsations
are regular, distinct, and continual.—
Every occasional exertion of body, and mind,
causes it to beat more violently. In Spring &
Summer, particularly the former, the circula-
-tion



tions being more enlarged, it becomes turgid, with a fuller and stronger pulsation. During the periods of menstruation, it beats powerfully; and by this impudent pulsation, and occasional turgescence, it forms among the cellular substance, or among the dilated veins, sacs of blood. These little sacs, form apices and two points, which become hide, and very thin, elevate and burst from time to time; until this anæmia, like other anæmias, pours out its blood so profusely, as to reduce the patient to extreme weakness.

To Mr. Bell I am indebted for this very accurate account of the growths and progress of this disease, being assured that none I could furnish, would be more elegant, lucid or concise. It will be seen, from the foregoing description of this disease, that its marks are so distinctive, as always from a knowledge of them, to enable us to recognise it under all circumstances. And yet this tumor, is not unfrequently called

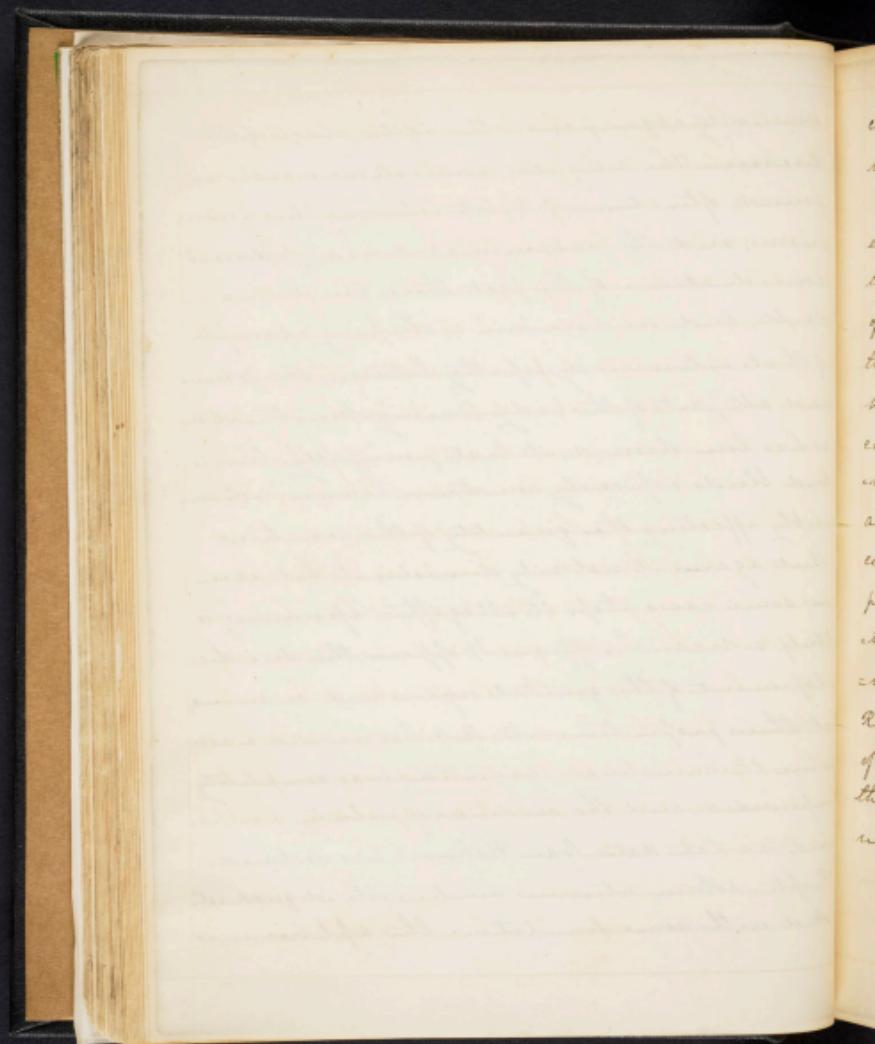


called Nervus Maternus, by some of our most enlightened Surgeons, even of the present day. But that they have confused the two together, is abundantly evident from facts. The one being a true Nervus, the other a true Anæmia from Anæstomosis. It is possible, (and indeed we shall enumerate it among the causes) for this disease to grow out of a Nervus Maternus, but when it assumes this Anæmical form, it no longer continues to be a Nervus, it both loses both its name and nature.— I have said that the various states of body and mind, rest and motion, have a direct and immediate effect on this tumour. Thus the exercise of walking, running, leaping, riding, &c, always cause it to pulsate quickly and strongly. Stimulant food and drink, have a similar ^{effect}, beauty, fight, anger, crying, in fact any thing that quickens the circulation, will increase its turgescence, with a more powerful pulsation.

Pain is not experienced at first, but most



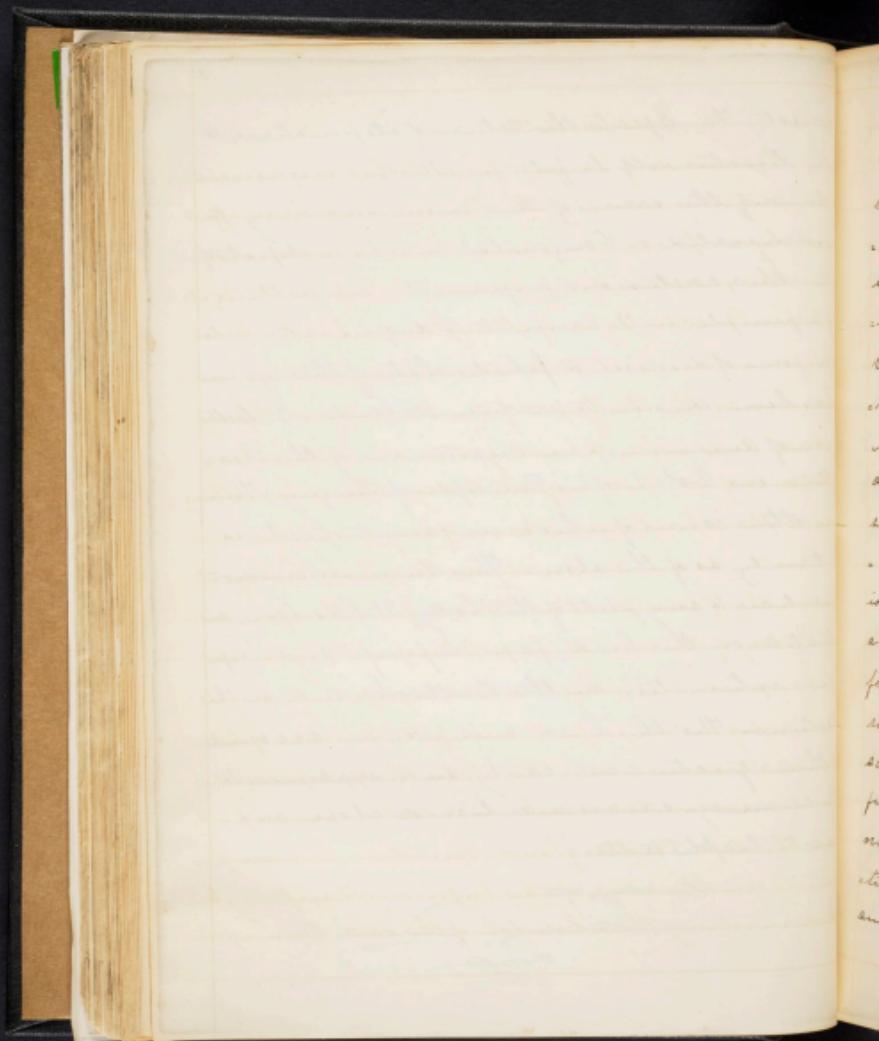
commonly accompanies the latter stages of the disease.—The singular connection which is found often times to exist between this disease, and the catamenial discharge, deserves consideration. Of the fact there can be no doubt, and we have here a striking example of that extensive sympathy between the uterus and all parts of the body. During Menstruation as has been observed, it beats powerfully, bursts and bleeds copiously, sometimes however not sensibly affecting the quantity of the secretion. But again it not only diminishes it, but even in some cases stops it altogether, suspending to itself a mercurious office. It opposes the due development of the genital organs and mammae, at their proper time. Mr. Bell has recorded a case, where the menstrual evacuation was completely suspended, and the evidences of puberty postponed to a late date. Van Helmont has declared, "Propterea volum uterum mulier est, id quod est." And with some limitations, the aphorism is



correct. For deprive the uterus of its function, & the disaster will be felt in all its consequences.

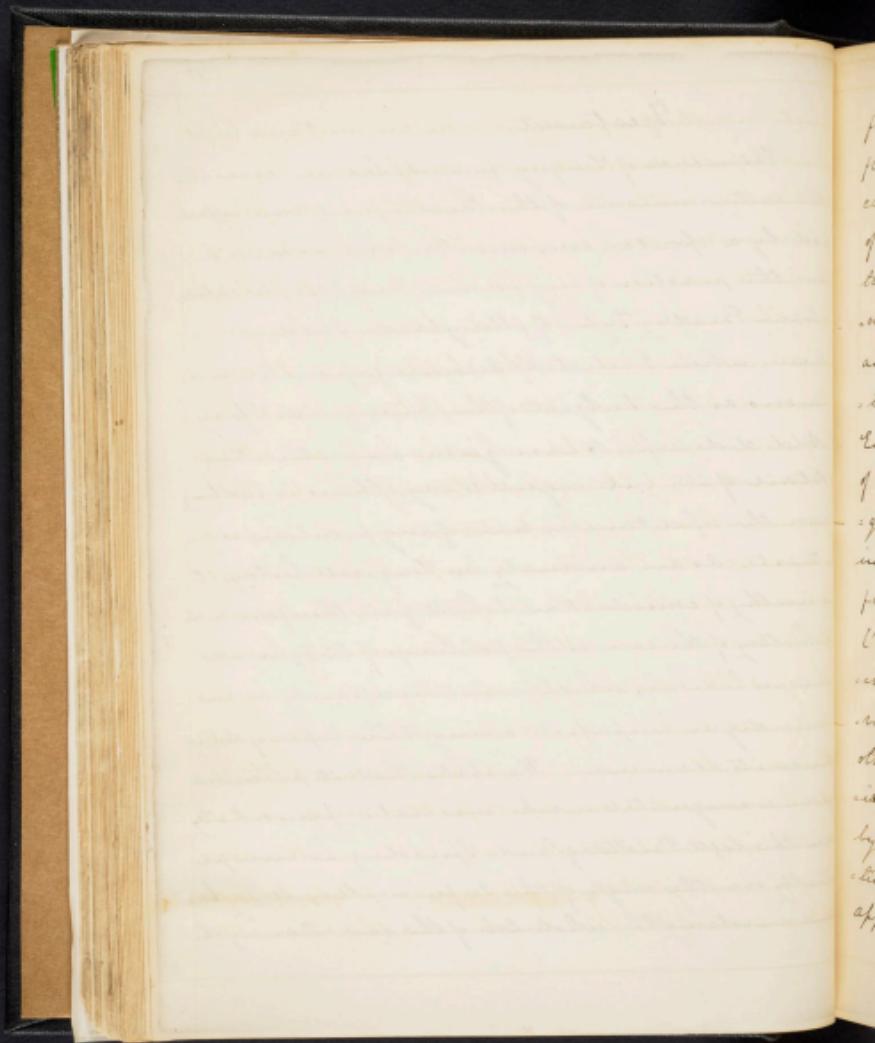
Among the causes of this anæmias, may be enumerated. — Congenital marks or defects of the skin, contusions, pressure, &c. The putting of a pimple, will cause it to degenerate into this form of disease. A febrile state of the system has been known to produce it. (vide Mr. Bell's case of Anæmia from Mastomachis of the Rectum in Vol 1. of his Principles of Surgery.) There are other causes of which we cannot speak so certainly, as of the above. This anæmias is not peculiar to any part of the body. It has been situated on the head, face, superior and inferior extremitie, on the Buttocks, and in the Rectum. The head and face on account of their greater vascularity, and exposure to the common causes mentioned above, are most liable to it.

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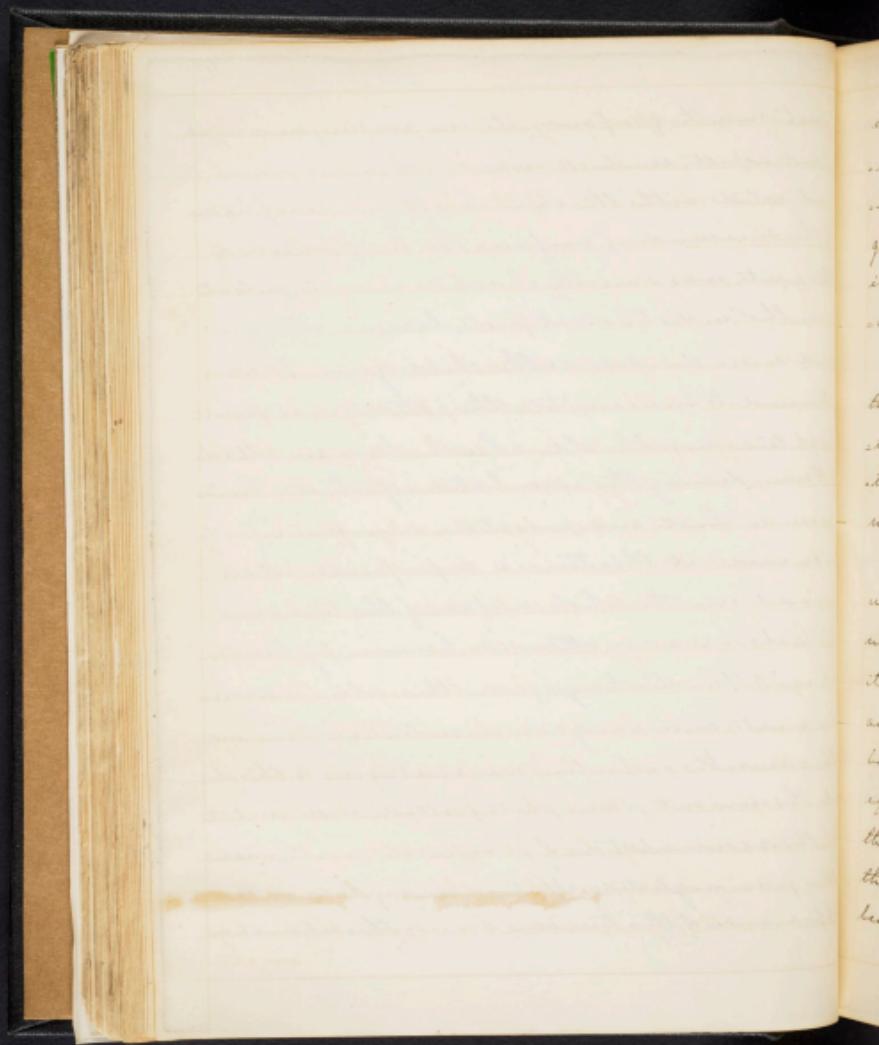


Treatment.

The records of Surgery, furnish but one case, where the entire removal of the tumor had been effected by a spontaneous cure. The case occurred in the practice of my former Preceptor Dr. William Bradley Tyler of Maryland. I had it in view, when I selected Anæmias from Anæstomosis as the Subject of an Inaugural Essay. And did hope, to have given an interesting detail of it, but regret to say, there is nothing save the spontaneous cure, of any peculiar interest. As an anomaly in Surgical history, it is worthy of consideration. I shall give, therefore, such a history of the case, as the politeness of Dr. Tyler has furnished me, which must necessarily be in some degree imperfect, owing to the lapse of time since its occurrence. "He states that it proceeded from a congenital mark, was seated principally on the left Parotid gland. Spreading however partially on the angle of the inferior Maxillary bone and involving the whole lobe of the ear. During the



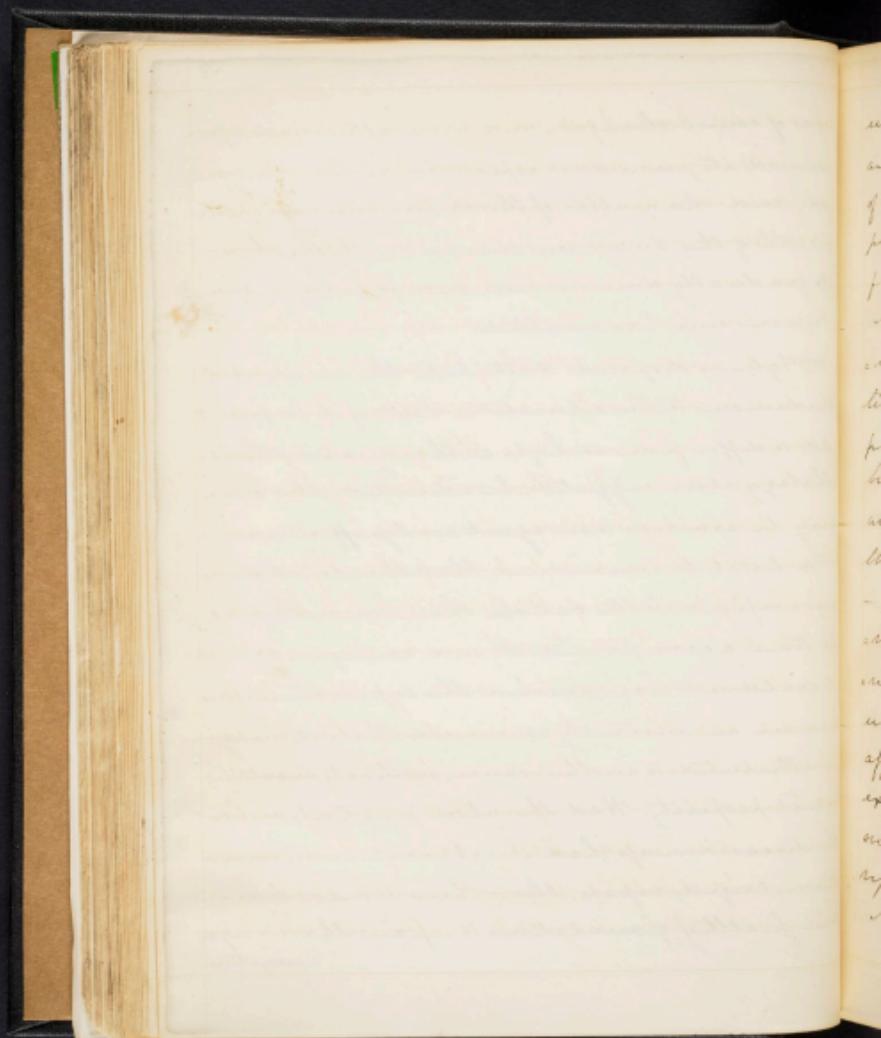
first months of infancy; it was an uniform, light
fluid aspect, rendered more conspicuous when
contrasted with the clear, healthful complexion
of the surrounding surface. The temperature of
the part, was sensibly elevated, and its pulsations,
which were indistinct at first, became stronger
and more decided, as the child grew. It con-
tinued to increase till the patient was about
eighteen months old, when he had an attack
of fever, during the exacerbations of which, the tu-
mors increased, heat, and pulsations were manifestly
increased. At this time a superficial ulcer
formed over the whole surface of the tumors.
(Which was soon attended however by humor
shaggy.) The discharge from this ulcer was very
great, and as regards consistency, colour, and
other visible properties, was analogous to the flu-
id thrown out from parts puffed, and inflated
by the accumulation of prospicible matter, issue-
ting from neglected ablations in infants.—The
appearance of the tumors, during the ulceration



was of course changed, and even afterwards assumed its primitive aspect. For as the ulcer healed, and the health of the child returned, the growth of the anæmias was evidently checked, it gradually diminished, and finally a spontaneous cure has resulted.

Dr. Tyler is disposed to attribute the removal of the tumour to the ulceration. But if it be permitted to differ from so high authority, and the Pathology above suggested be admitted, the cure may be ascribed to an agent no less effective.

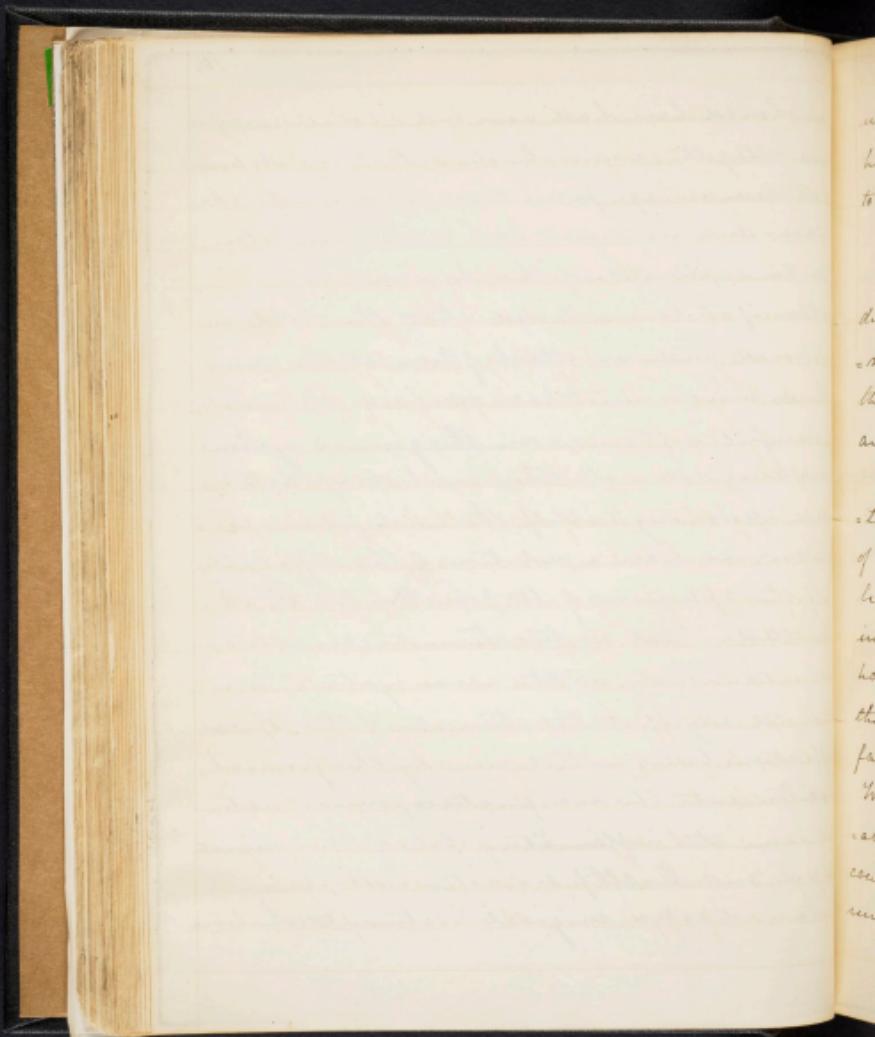
For let it be remembered that the ulceration was confined to the cuticle, that hemorrhage at no time accompanied it, and consequently that it could not have reached the vessels themselves and even an instantly convinced that it may be attributed to another cause, with at least equal propriety. Had the ulcer punctuated into the diseased mass, had it eaten out as it were, the enlarged vessels, thus there would have been healthy granulations to repair the disorganized



we should have had new, and undiseased aspects
and altogether a new structure. But the absence
of all hemorrhage proves that this did not take
place. And we must look to something else,
for an explanation of this phenomenon. —

Now if it be recollect'd that the child is
buried under an attack of Fever at the same
time, which must have exercised the most
powerful influence over the general system,
breaking down all other material associations,
and sparing to itself, the whole frame, as it
then is, we have a solution of the difficulty.
— If the aphorisms of Mr. John Hunter, be ad-
mitted, "That no two stimuli can exist in
multaneously in the same system." We
would say that the stimulus of the topical
affection, being withdrawn by the general
excitement, the recuperative powers of nature
overcame the inflammatory state of the viscous
parts, and healthful reaction took place. —

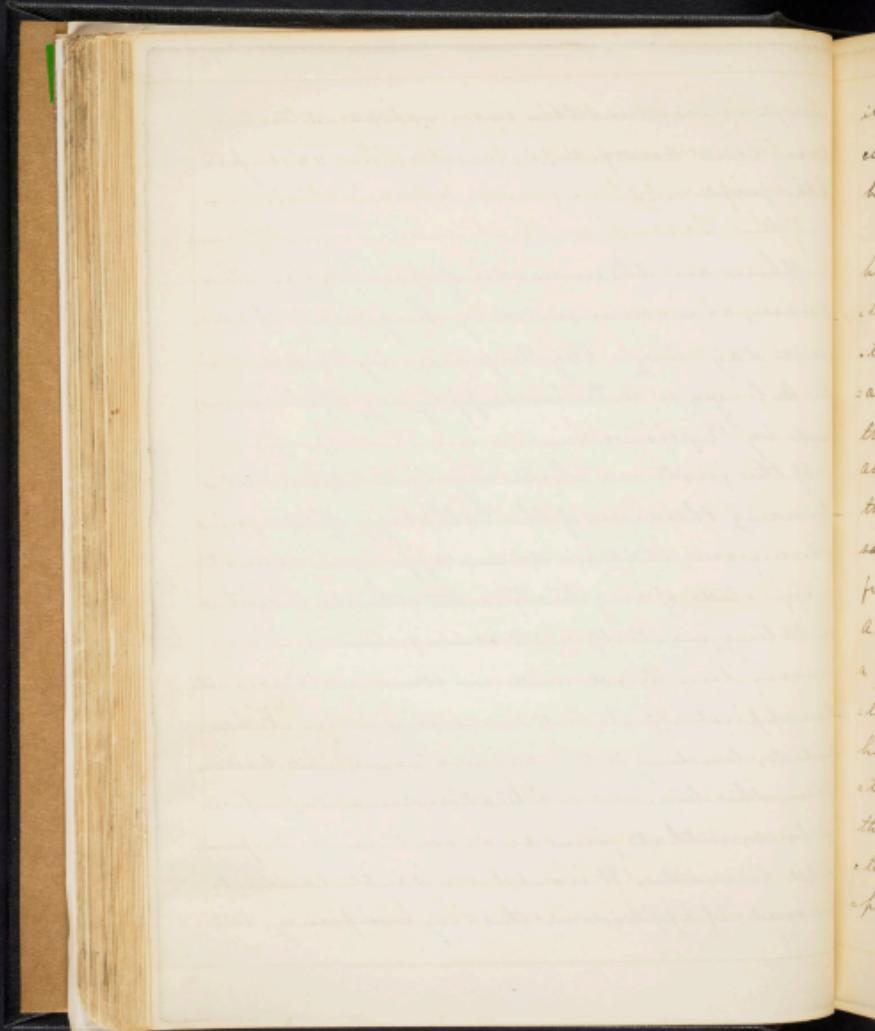
No medical or surgical treatment whatever



was practised in this case, except it may have been Antiphilic medicines, addressed to the pustules.

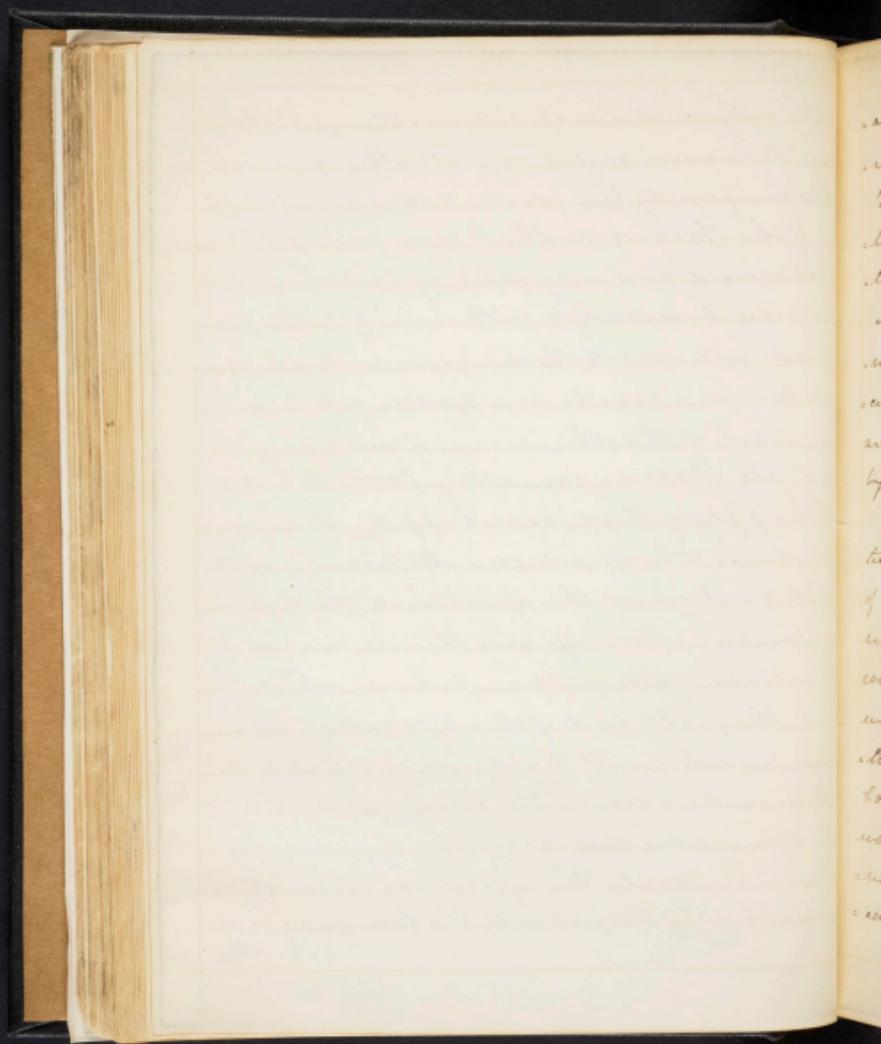
There are three modes of operating on this disease, as recommended by Surgeons of the present day - viz - By Purposing, by Tumouring the Arteries or arteries supplying the Tumour; and by Excision.

Of the first we shall say but little. Entertaining the views of the Pathology of this form of Anæmia, that we do, our approval cannot be expected of any treatment which is either irritating in itself or its consequences. It has however been tried and in some instances with the happiest effect, but in many more it has failed, tending to the aggravation of the disease. When the tumour is situated over a superficial bone, so that firm and continued pressure could be made, it would no doubt cause its removal, if applied in the very incipiency, but



it is only under such circumstances, that it can be recommended. In all other cases it has uniformly been found to do mischief.—

Of the Second we think more favourably, cases have occurred and may occur again, where it alone can be resorted to, with security to the patient, or credit to the surgeon; an anxious al tumor can be so situated, as to be out of the reach of the other means of subduing it, and all that we can attempt, is to cut off the supply of blood, and happily, it is found sometimes to be efficient.—M. Travers was the first to introduce this operation to the Profession a woman, whose eye was thrust forward by a pulsating tumor from behind, which filled the greater part of the orbit, called upon him for relief. M. Travers immediately determined to secure the common Carotid of the same side, and accordingly put a ligature around it. The effect was instantly experienced by the patient, the tumor gradually

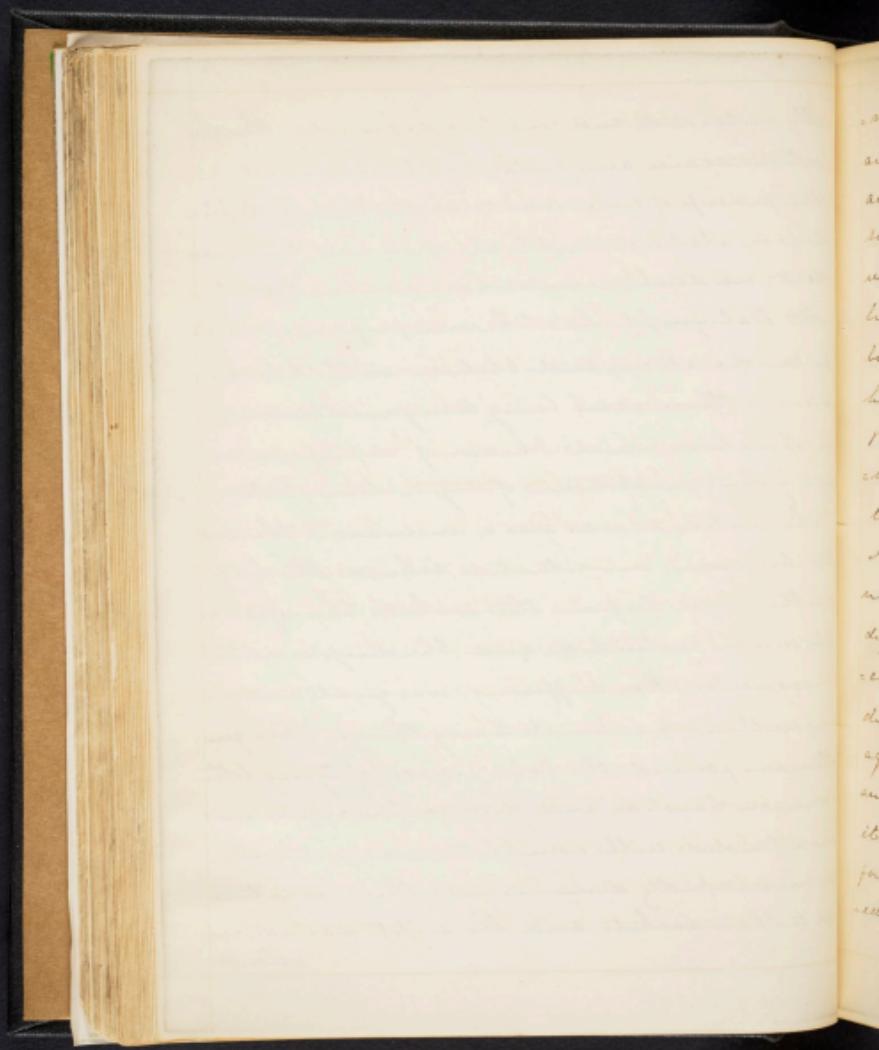


ally subsided, and in two years after the operation scarce any vestige of it remained.

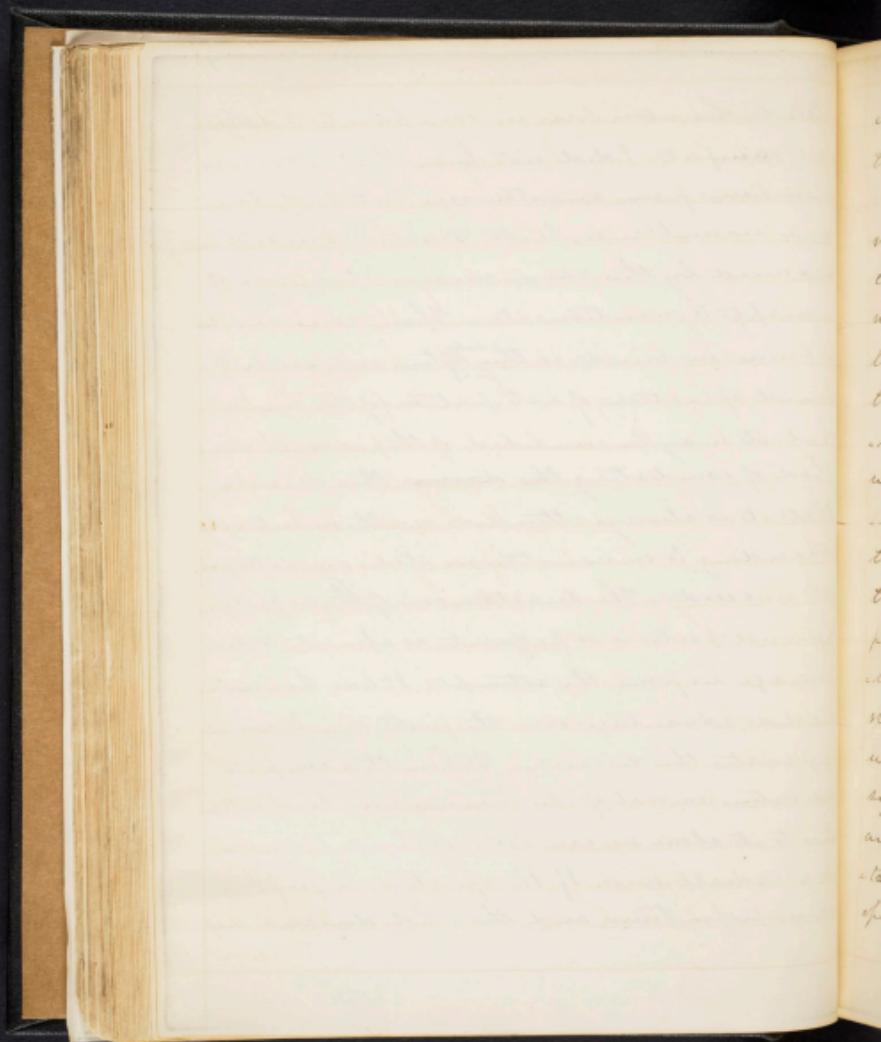
The process of cure was unassisted by depletion or abstinence, which, if it had been attended, no doubt would have accelerated it.

Mr. Dalrymple has likewise performed a similar operation, and I believe with like success. — These cases bring to my recollection, an operation which I heard of, as performed by a young practitioner of my native state.

The patient was also a woman. — She had two tumours, one situated behind the ball of either eye, deep in the socket. The eyes were very much protruded, and blindness was the consequence. Her suffering was great, and she was willing to submit to any thing. — This gentleman formed the bold project of tying both common Carotids, and did so. The experiment was attended with complete success, the tumours rapidly diminished, the eyes returned to their sockets, and the sight was restored.

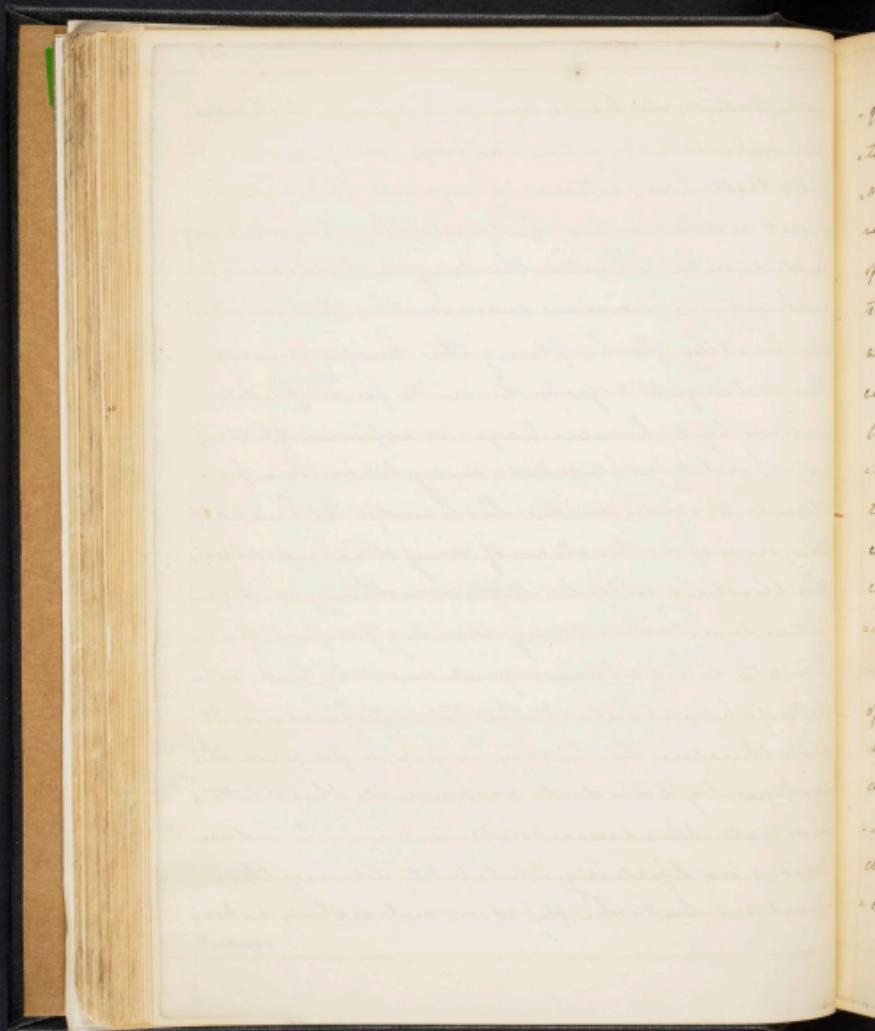


stered, she now lives in comparative ease and comfort. I did not hear that this was aneurism from anastomosis, but as it bore some resemblance to Mr. Travis' case and was cured by the same means, it may not be inept to mention it. — These cases should be borne in mind, as they ^{may} often supersede the horrid operation of extirpation of the eye. — But it may be remarked of this second method of combating the ~~disease~~ this disease, that it is always attended with uncertainty. According to circumstances it may or it may not succeed. — The anastomosis of the vessels of different parts, is so frequent, as almost to discourage us from the attempt. It has however this decided advantage over the first, viz. It never aggraves the disease. — When the complete and entire removal of the tumour can be effected, it is to it alone we can look with confidence for a radical cure. If the operation be performed in proper time, and the whole diseased mass



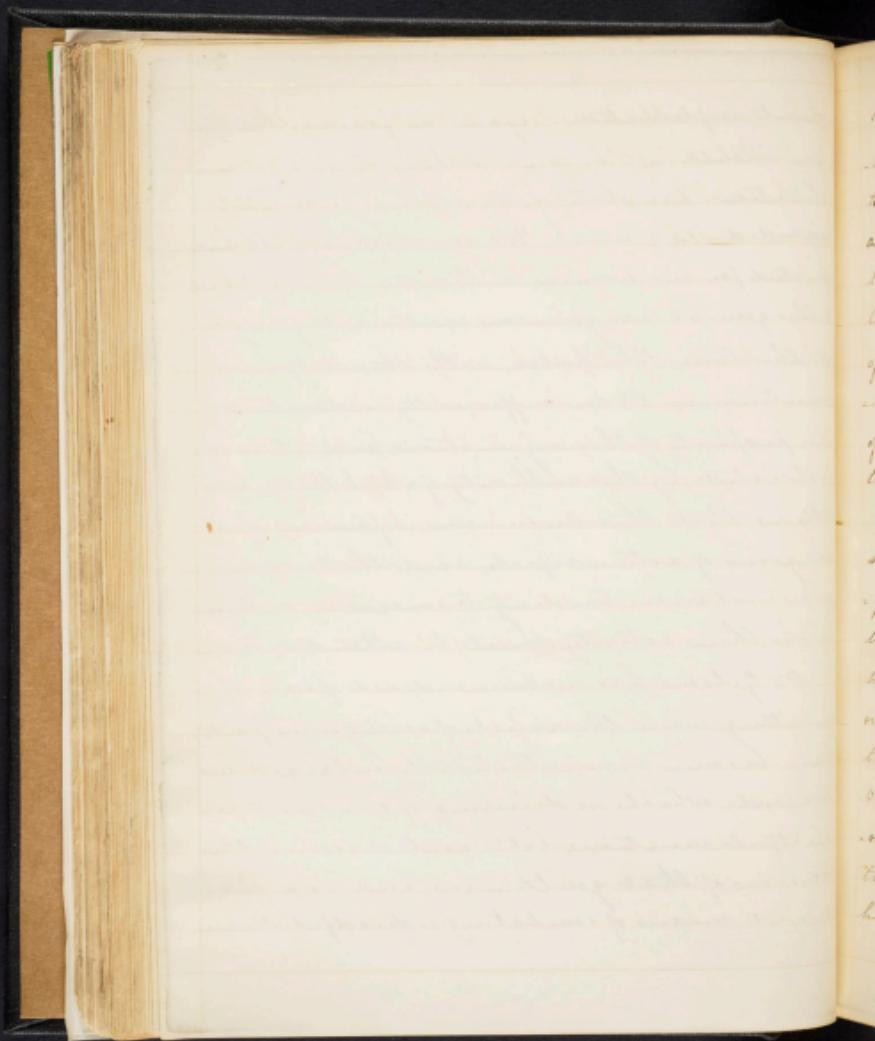
extirpated, it has been known to decieve
the expectations of the Surgeon.

Mr. Bell has particularly enforced it, that we
must not "Cut this" Cut into this tumour, but
cut it out." Should the surgeon instead of
making his incision around the disease, the
the healthy flesh, flung the knife among
the enlarged vessels, he will find ^{himself} tuber-
culous by a hemorrhage, so copious, that if
not speedily controlled, may leave his pa-
tient a curse under his hands. Whereas if
the incision be clear of any diseased vessels,
the bleeding will be little or nothing, and your
patient will have every seeming prospect of ul-
timate relief. Some regard must be had to the
state of the patient at the time of operating. It
will therefore be highly proper, to prepare the
systems, by low diet, occasional blood-letting
and rest. this course will not only be ad-
equate in lessening irritability during the
operations, but chiefly so in mitigating subse-
quent



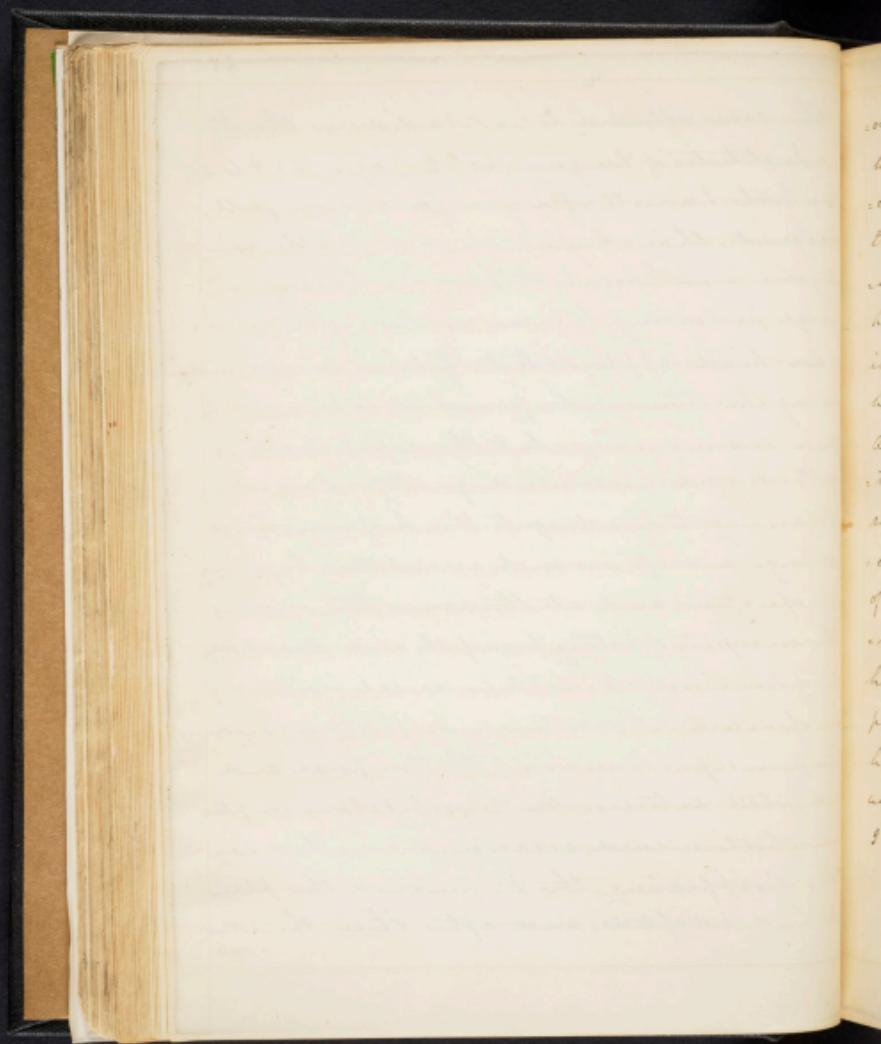
-quent inflammations. again in females the operation should not be undertaken during menstruation. The state of the system ^{at the period} is too little regarded in general. We see diseases of all kinds operated for in women, without a little prospect to the general sanguineous excitement going on at the time. The pulse, with the supposed countenance &c are sufficiently indicators of the propriety of this injunctions, and it is corroborated by the authority of Mr. J. Bell, who tells us that this anæmia is formed of a congeries of active vessels, and that every circumstance tending to increase or diminish their activity, must be attended to....

Dr. Gibbons has recommended a plan of operating, where the vessels of contiguous parts have become sympathetically enlarged and diseased, which is deserving of our most respectful mention; both as it discourses the decisions of that gentleman, and as a merciful means of combating a dreadful disease.



The case alluded to is detailed in the Dr.
s Institutes of Surgery - Vol 2 - pages 153 & 4 -
to which I must refer you for a more full
account, than my limits will enable me
to give. — Elizabeth Lushes having a
large pulsating tumour on the right side
of her head, applied to Dr. Gibsons for examining
the tumour, he found it to be not only
of an enormous size, but the vessels leading
to it very numerous and greatly enlarged.

Deeming it unsafe to think of removing
so large a mass, in such a condition, by a sin-
gle operation, and at the same time seeing
the necessity of acting promptly and decidedly,
he determined to institute several instead of
one operations. Accordingly he first removed
the principal branches of the Temporal and
occipital arteries. An Erysipelas erupting
on which ensued, occasioned a weeks delay,
this disappearing, the Dr pursued the plan
he had adopted, and after three operat-
ions



ions (meaning the vessels so he divided them) had the satisfaction ^{tomorrow} completely and radically the whole diseased mass. In due time the wound healed up, the patient recovered his health, and no return of the disease has since manifested itself. — Dr. Gilson is convinced that tying the Carotid, would have had no good effect in this case, the anastomosis was too extensive and well established, to have been much affected by such an expedient. — As this paper will necessarily meet Dr. Gilson's eye, both as Professor of Surgery and my private preceptor, I am restrained from rendering that tribute, which he is entitled for this as well as many other practical lessons in Surgery. The Professors however bear a just sense of his merits and will under that which with propriety I cannot. —

— Yours,

